

Missouri Department of Natural Resources

Total Maximum Daily Load Information Sheet

Big Creek

Waterbody Segment at a Glance:

County:	Iron
Nearby Cities:	Chloride, Glover
Length of impairment:	4.0 miles
Pollutant:	Metals
Source:	Lead smelter



State map showing location of watershed

TMDL Priority Ranking: High

Description of the Problem

Beneficial uses of Big Creek

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life and Human Health associated with Fish Consumption.

Use that is impaired

- Protection of Warm Water Aquatic Life

Standards that apply

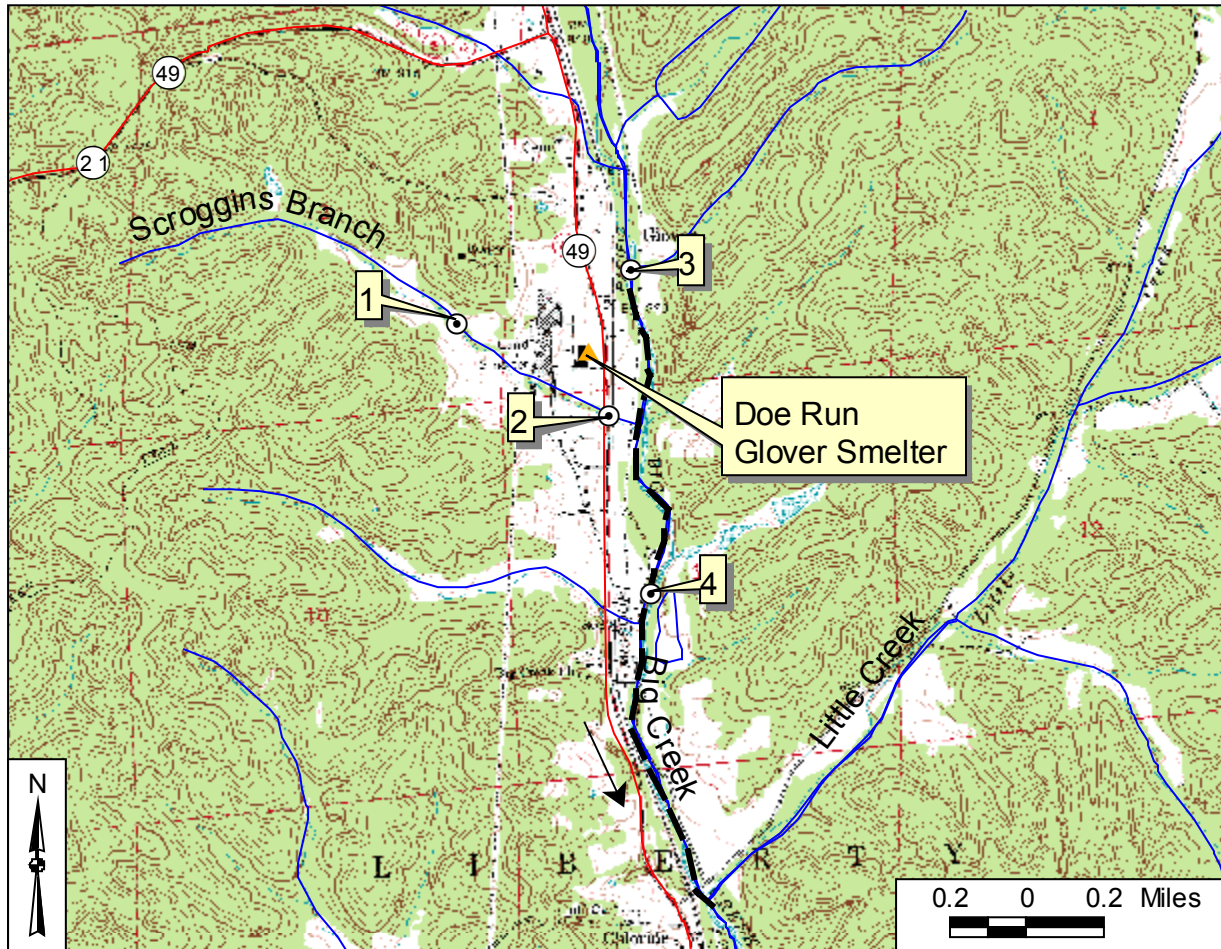
- Missouri Water Quality Standards for metals found in 10 CSR 20-7.031(4)(B)1 state:
Water contaminants shall not cause the criteria in Tables A and B to be exceeded.
Concentrations of these substances in bottom sediments or waters shall not harm benthic organisms and shall not accumulate through the food chain in harmful concentrations, nor shall state and federal maximum fish tissue levels for fish consumption be exceeded.

The metal smelter near Glover, Missouri, contributes significant quantities of heavy metals to Big Creek in Iron County. Metals find their way to the stream via fallout from smokestack emissions, fugitive dusts and drainage from smelter slag (waste) piles. Many of the airborne metal dusts that settle to the ground in the immediate smelter area are captured by a wastewater and stormwater treatment system installed several years ago. The installation of this system significantly lowered the amounts of cadmium and lead entering Big Creek. Despite the construction and operation of this wastewater treatment system, some problems remain. The U.S. Geological Survey has documented elevated levels of cadmium in fish in Big Creek, and the smelter is the only likely significant cadmium source in the watershed. Water quality monitoring has detected large amounts

of zinc leaching from the slag pile and the Department of Natural Resources has documented potential toxicity to aquatic life in Big Creek (probably due to zinc).

The data shown below notes water quality standards exceedences. These exceedences apply only to Big Creek. Notation of water quality exceedences on Scroggins Branch show which values would have exceeded state standards if Scroggins Branch were a classified stream.

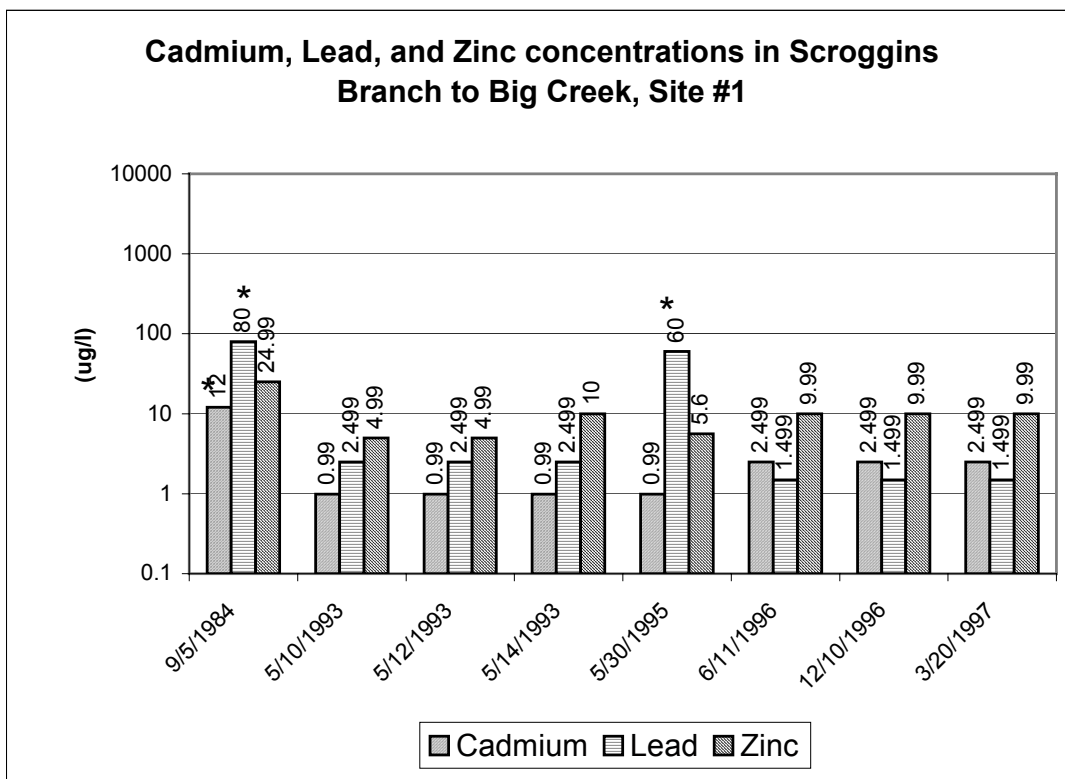
Map of Big Creek near Glover in Iron County



--- Impaired Section → Direction of Flow

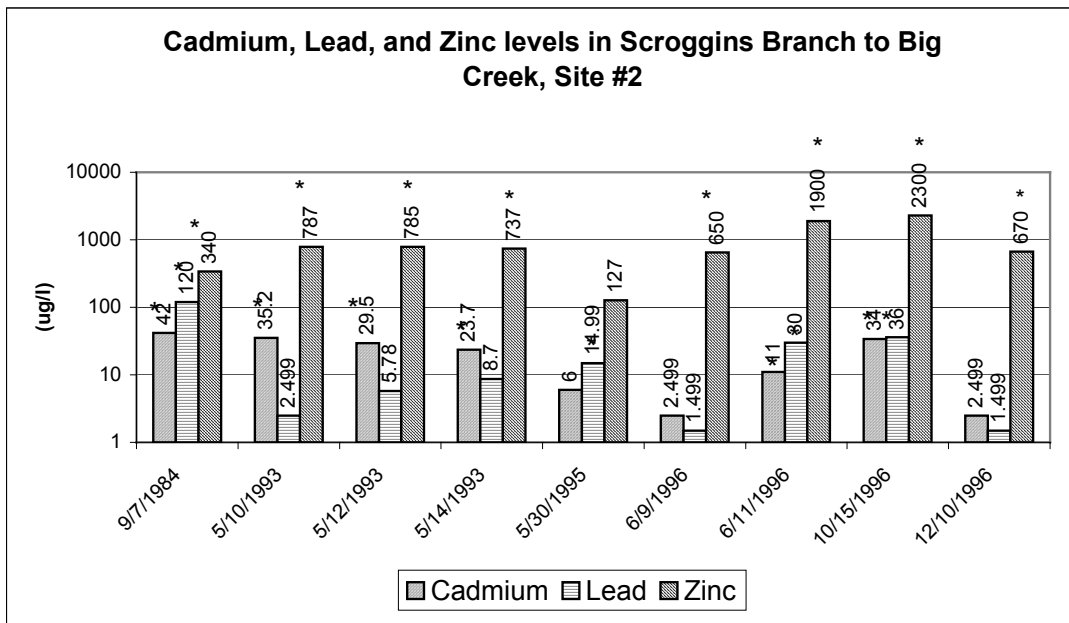
Site Index

- 1 – Scroggins Branch above Glover Smelter
- 2 – Scroggins Branch below Glover Smelter
- 3 – Big Creek 0.1 mile above Glover Smelter
- 4 – Big Creek 0.5 mile below Glover Smelter



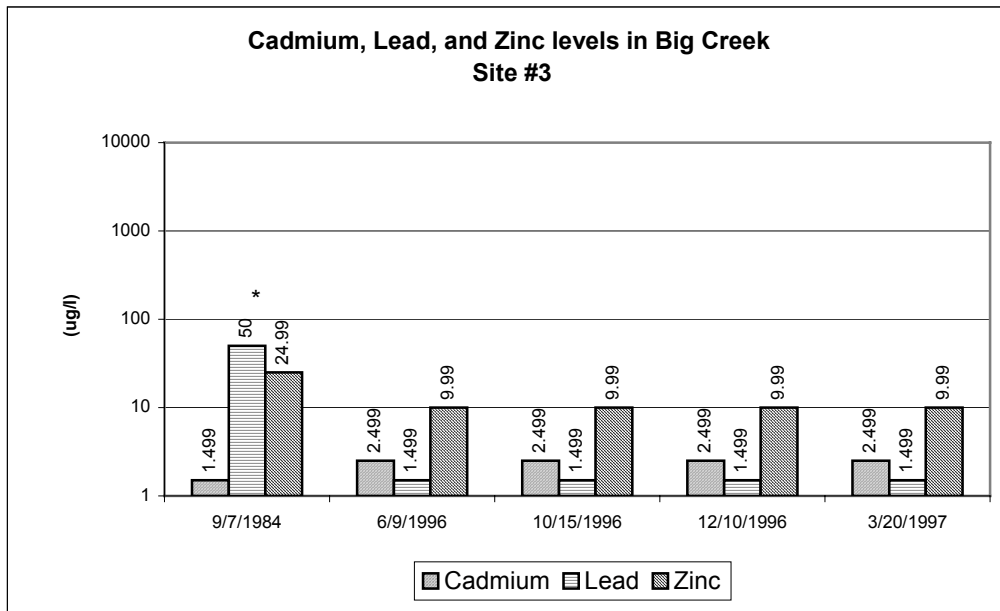
* = Violation of Water Quality Standards

Sources: Missouri Department of Natural Resources and Hydro-Search, Inc.



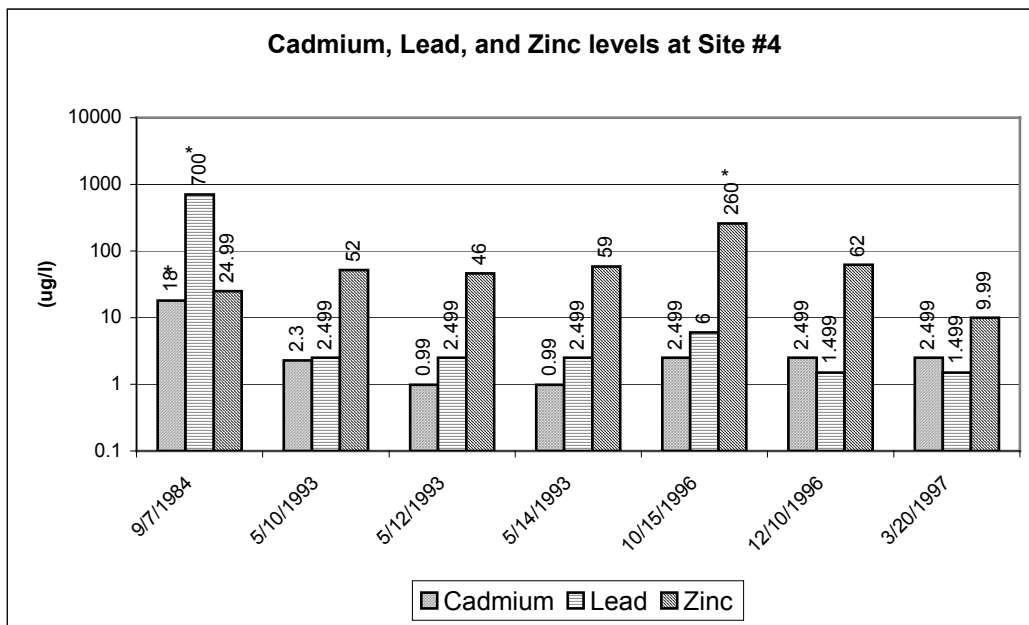
* = Violation of Water Quality Standards

Sources: Missouri Department of Natural Resources and Hydro-Search, Inc.



* = Violation of Water Quality Standards

Sources: Missouri Department of Natural Resources and Hydro-Search, Inc.



* = Violation of Quality Standards

Sources: Missouri Department of Natural Resources and Hydro-Search, Inc.

For more information call or write:

Missouri Department of Natural Resources, Water Pollution Control Program

P.O. Box 176, Jefferson City, MO 65102-0176

1-800-361-4827 or (573) 751-1300 office or (573) 751-9396 fax

Program Home Page: www.dnr.state.mo.us/wpscd/wpcp/index.html